

PCT

WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

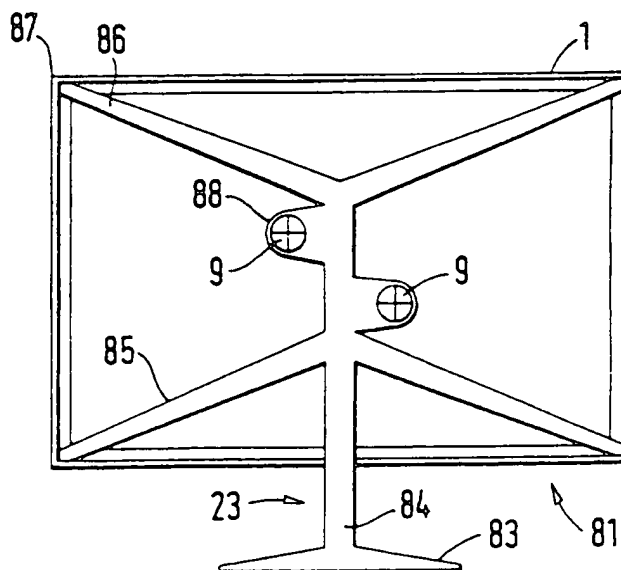
INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶ : H04R 1/02, 1/20, 7/06, 7/20		A3	(11) International Publication Number: WO 97/09845
			(43) International Publication Date: 13 March 1997 (13.03.97)
(21) International Application Number: PCT/GB96/02158		(81) Designated States: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, UZ, VN, ARIPO patent (KE, LS, MW, SD, SZ, UG), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).	
(22) International Filing Date: 2 September 1996 (02.09.96)			
(30) Priority Data: 9517918.0 2 September 1995 (02.09.95) GB 9522281.6 31 October 1995 (31.10.95) GB 9606836.6 30 March 1996 (30.03.96) GB			
(71) Applicant (for all designated States except US): VERITY GROUP PLC [GB/GB]; Stonehill, Huntingdon, Cambridgeshire PE18 6ED (GB).		Published With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.	
(72) Inventors; and (75) Inventors/Applicants (for US only): AZIMA, Henry [CA/GB]; 3 Southacre Close, Chaucer Road, Cambridge CB2 2TT (GB). COLLOMS, Martin [GB/GB]; 22 Burgess Hill, London NW2 2DA (GB). HARRIS, Neil [GB/GB]; 9 Davey Crescent, Great Shelford, Cambridge CB2 5JF (GB).		(88) Date of publication of the international search report: 29 May 1997 (29.05.97)	
(74) Agent: MAGUIRE & CO.; 5 Crown Street, St. Ives, Cambridgeshire PE17 4EB (GB).			

(54) Title: LOUDSPEAKERS COMPRISING PANEL-FORM ACOUSTIC RADIATING ELEMENTS

(57) Abstract

A panel-form loudspeaker (81) comprising a resonant distributed mode acoustic radiator having a periphery, a transducer (9) mounted to the radiator to excite distributed mode resonance in the radiator, and a frame (1) supporting the radiator, the transducer being coupled between the radiator and the frame to vibrate the panel to cause it to resonate to produce an acoustic output, characterised in that frame supports the radiator round its periphery and by resilient suspension means coupled between the frame and the radiator periphery.



BEST AVAILABLE COPY

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AM	Armenia	GB	United Kingdom	MW	Malawi
AT	Austria	GE	Georgia	MX	Mexico
AU	Australia	GN	Guinea	NE	Niger
BB	Barbados	GR	Greece	NL	Netherlands
BE	Belgium	HU	Hungary	NO	Norway
BF	Burkina Faso	IE	Ireland	NZ	New Zealand
BG	Bulgaria	IT	Italy	PL	Poland
BJ	Benin	JP	Japan	PT	Portugal
BR	Brazil	KE	Kenya	RO	Romania
BY	Belarus	KG	Kyrgyzstan	RU	Russian Federation
CA	Canada	KP	Democratic People's Republic of Korea	SD	Sudan
CF	Central African Republic	KR	Republic of Korea	SE	Sweden
CG	Congo	KZ	Kazakhstan	SG	Singapore
CH	Switzerland	LI	Liechtenstein	SI	Slovenia
CI	Côte d'Ivoire	LK	Sri Lanka	SK	Slovakia
CM	Cameroon	LR	Liberia	SN	Senegal
CN	China	LT	Lithuania	SZ	Swaziland
CS	Czechoslovakia	LU	Luxembourg	TD	Chad
CZ	Czech Republic	LV	Latvia	TG	Togo
DE	Germany	MC	Monaco	TJ	Tajikistan
DK	Denmark	MD	Republic of Moldova	TT	Trinidad and Tobago
EE	Estonia	MG	Madagascar	UA	Ukraine
ES	Spain	ML	Mali	UG	Uganda
FI	Finland	MN	Mongolia	US	United States of America
FR	France	MR	Mauritania	UZ	Uzbekistan
GA	Gabon			VN	Viet Nam

BEST AVAILABLE COPY

INTERNATIONAL SEARCH REPORT

International Application No
PCT/GB 96/02158

A. CLASSIFICATION OF SUBJECT MATTER IPC 6 H04R1/02 H04R1/20 H04R7/06 H04R7/20		
According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) IPC 6 H04R		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practical, search terms used)		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 3 247 925 A (WARNAKA) 26 April 1966 see column 2, line 55 - column 3, line 38; figures	1,2,11
A	---	1-4,11
A	GB 2 010 637 A (SONY CORP) 27 June 1979 see page 2, line 77 - page 3, line 78; figures	1
A	WO 92 03024 A (SECR DEFENCE BRIT) 20 February 1992 see page 5, line 4 - page 6, line 5; figures & GB 2 262 861 A (SECR DEFENSE) 30 June 1993 cited in the application ---	1
-/--		
<div style="display: flex; justify-content: space-between;"> <input checked="" type="checkbox"/> Further documents are listed in the continuation of box C. <input checked="" type="checkbox"/> Patent family members are listed in annex. </div>		
<div style="display: flex;"> <div style="flex: 1;"> <p>* Special categories of cited documents:</p> <p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier document but published on or after the international filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p> </div> <div style="flex: 1;"> <p>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</p> <p>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.</p> <p>"A" document member of the same patent family</p> </div> </div>		
Date of the actual completion of the international search <div style="text-align: center; font-size: 1.2em;">14 March 1997</div>		Date of mailing of the international search report <div style="text-align: center; font-size: 1.2em;">10.04.97</div>
Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl. Fax (+31-70) 340-3016		Authorized officer <div style="text-align: center; font-size: 1.2em;">Gastaldi, G</div>

INTERNATIONAL SEARCH REPORT

Internat'l Application No
PCT/GB 96/02158

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 0 669 782 A (KENWOOD CORP) 30 August 1995 see column 6, line 4 - column 9, line 15; figures ---	1,6-9
A	US 4 751 419 A (TAKAHATA) 14 June 1988 see column 4, line 32 - column 6, line 35; figures -----	1,10

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/GB 96/02158

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 3247925 A	26-04-66	GB 1013643 A	

GB 2010637 A	27-06-79	AT 362000 B	10-04-81
		CA 1102444 A	02-06-81
		DE 2850786 A	18-10-79
		FR 2410410 A	22-06-79
		NL 7811631 A,B,	29-05-79
		US 4198550 A	15-04-80

WO 9203024 A	20-02-92	GB 2246684 A	05-02-92
		AT 117155 T	15-01-95
		DE 69106712 D	23-02-95
		DE 69106712 T	08-06-95
		EP 0541646 A	19-05-93
		GB 2262861 A,B	30-06-93
		JP 5509211 T	16-12-93

EP 0669782 A	30-08-95	JP 7240985 A	12-09-95
		DE 669782 T	29-02-96

US 4751419 A	14-06-88	NONE	
